Applicant(s): Hartmut Sauer Attorney Docket No.: 68001-007US1

Scrial No. : 10/553,242 Filed : October 14, 2005

Page : 4 of 14

## AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application:

## Listing of claims:

 (Currently amended) Use of an article whose A method for producing an article having a surface formed of a composite material, the method comprising:

microstructuring a surface of a non-metallic substrate; and

depositing a metallic layer onto the surface of the non-metallic substrate without applying an external current;

surface exhibits a composite material in full or in parts; wherein the non-metallic substrate contains at least one polymer and a composite material eonsisting of a non-metallic substrate containing at least one polymer, and a metallic layer present thereon and deposited without external current, having that includes a non-metallic substrate and a metallic layer thereon and has an adhesive strength of at least 4 N/mm², as and moulding tool.

- (Currently amended) Use according to The method of claim 1 characterised in
  that, wherein the standard deviation of the adhesive strength at six different measured
  value points distributed over the surface of the composite material is maximum 25 % of
  the arithmetic mean.
- $3. \ (Currently \ amended) \ \ \underline{Use-according-to} \ \underline{The} \ \underline{method} \ \underline{of} \ claim \ 1 \ \underline{characterised-in}$ 
  - the surface of the <u>non-metallic substrate</u> article is not chemically pretreated before the application of depositing the metallic layer deposited without <u>applying</u> an electric current; and
  - the metallic layer is not applied to the surface of the non-metallic substrate
     by thermal spraying, CVD, PVD or laser treatment.

Applicant(s): Hartmut Sauer Attorney Docket No.: 68001-007US1

Serial No. : 10/553,242 Filed : October 14, 2005

Page : 5 of 14

4-5 (Cancelled)

6. (Currently amended) Use according to The method of claim 1 characterised-in that, wherein the boundary present between the non-metallic substrate and the metallic layer exhibits has a roughness with a[[n]] maximum R<sub>z</sub> value of maximum 35 μm.

- 7. (Currently amended) Use according to The method of claim 1 characterised-in that, wherein the boundary present between the non-metallic substrate and the metallic layer exhibits a roughness with a[[n]] maximum R<sub>e</sub> value of maximum 5 µm.
- 8. (Currently amended) Use according to The method of claim 1 characterised in that, wherein the non-metallic substrate contains at least one fibre fiber-reinforced polymer, in particular a polymer reinforced with carbon fibre and the diameter of the fibre is less than 10 µm.
- 9. (Currently amended) Use according to The method of claim [[1]] 8 characterised in that, wherein the non-metallic substrate contains at least-one fibre fiber-reinforced polymer, in particular is a polymer reinforced with glass fibre and the diameter of the fibre is more than 10 µm.
- 10. (Currently amended) Use-according to The method of claim 9 characterised in-that, wherein the boundary present between the non-metallic substrate and the metallic layer exhibits a roughness with an  $R_a$  value of maximum 10  $\mu$ m.
- 11. (Currently amended) Use according to The method of claim 9 characterised in that, wherein the boundary present between the non-metallic substrate and the metallic layer exhibits a roughness with an  $R_z$  value of maximum 100  $\mu$ m.

Applicant(s): Hartmut Sauer Attorney Docket No.: 68001-007US1

Serial No. : 10/553,242 Filed : October 14, 2005

Page : 6 of 14

12. (Currently amended) Use-according to The method of claim 1 characterised in that, wherein the polymer is selected from the group consisting of polyamide, polyvinyl chloride, polystyrene, epoxy resin, polyether ether ketone, polyoxymethylene, polyformaldehyde, polyacetal, polyurethane, polyether imide, polyphenyl sulphone, polyphenylene sulphide, polyarylamide, polycarbonate, and polyimide.

- (Currently amended) Use according to The method of claim 12 characterised in that, wherein the metallic layer exhibits has an adhesive strength of at least 12 N/mm².
- 14. (Currently amended) Use according to The method of claim 1 characterised in that, wherein the non-metallic substrate is polypropylene or polytetrafluoroethylene[[,]].
- 15. (Currently amended) Use according to The method of claim 1 characterised in that, wherein the standard deviation of the adhesive strength amounts to maximum 25 %; in particular maximum 15 %; of the arithmetic mean.
- 16. (Currently amended) Use according to The method of claim 1 characterised in that, wherein the metal layer deposited without applying an electric current is a metal alloy or metal dispersion layer.
- 17. (Currently amended) Use according to The method of claim 1 characterised in that, wherein the metal layer deposited without applying an external current is a copper, nickel or gold layer.
- 18. (Currently amended) Use according to The method of claim 16 characterised in that, wherein the metal dispersion layer deposited without applying an external current is a copper, nickel or gold layer with embedded non-metallic particles.

Applicant(s): Hartmut Sauer Attorney Docket No.: 68001-007US1

Serial No. : 10/553,242 Filed : October 14, 2005 Page : 7 of 14

19. (Currently amended) Use according to The method of claim 18 characterised in that, wherein the non-metallic particles exhibit a hardness of more than 1,500 HV and are selected from the group consisting of silicon carbide, corundum, diamond, and tetraboron carbide

- 20. (Currently amended) Use according to The method of claim 18 characterised in that, wherein the non-metallic particles exhibit friction-reducing properties and are selected from the group consisting of polytetrafluoroethylene, molybdenum sulphide, cubic boron nitride, and tin sulphide.
- 21. (Currently amended) Use according to The method of claim 1 characterised in that further comprising:

after the metal layer is deposited, further depositing a layer of aluminum. titanium, or their alloys onto the metallic layer deposited without applying an external current; and

anodically oxidizing or ceramic treating the deposited layer of aluminum, titanium, or their alloys, a layer of aluminium, titanium or their alloys is applied whose surface is anodically oxidised or ceramics-treated.

- 22. (Currently amended) Use according to The method of claim 21 characterised in that, wherein one or several metallic layers are also arranged between the metallic layer deposited without applying an external current and the layer of aluminium aluminum, titanium, or their alloys,
- 23. (Currently amended) Use according to The method of claim 21 characterised in that, wherein the surface of the article is a ceramic oxide layer of aluminium aluminum, titanium, or their alloys, which layer is coloured black by foreign ion embedments.

Applicant(s): Hartmut Sauer Attorney Docket No.: 68001-007US1

Serial No. : 10/553,242 Filed : October 14, 2005 Page : 8 of 14

24. (Cancelled)

- 25. (New) The method of claim 8, wherein the fibre-reinforced polymer is a polymer reinforced with carbon fibre whose diameter is less than 10 µm.
- 26. (New) The method of claim 15, wherein the standard deviation of the adhesive strength amounts to maximum 15 % of the arithmetic mean.
- 27. (New) The method of claim 1, wherein the surface surface of a non-metallic substrate is microstructured with a blasting agent.